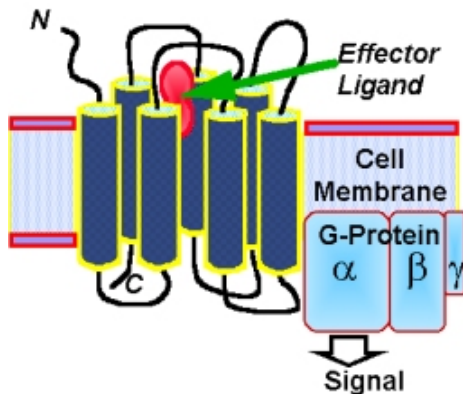


# 7 TMR Drug Discovery, Microfluidics & HT Flow Cytometry (EB00264)

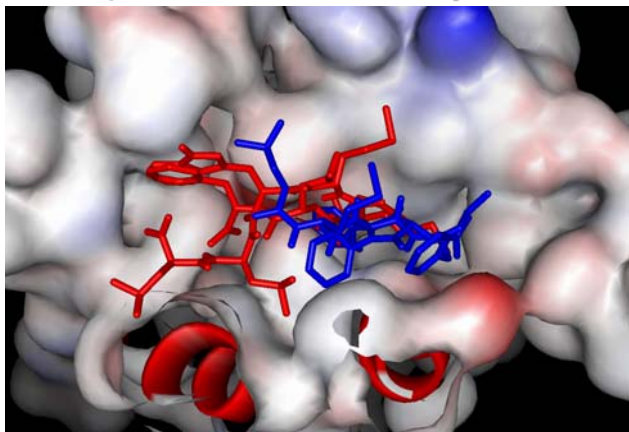
## 1. GPCR Expression: ER Prossnitz,

Highlights: Expression of tagged GPCR, analysis of receptor trafficking



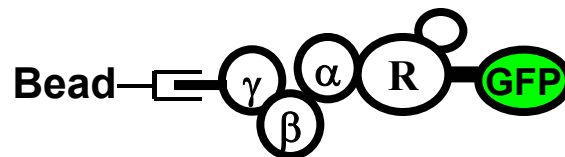
## 4. Virtual Screening: Tudor Oprea

Highlights: Improved screening efficiency by selection of compounds from library



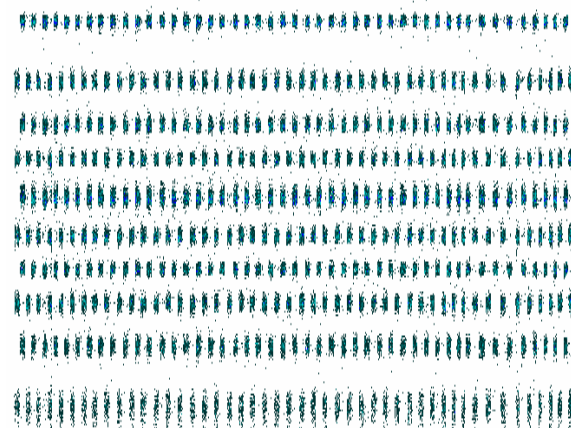
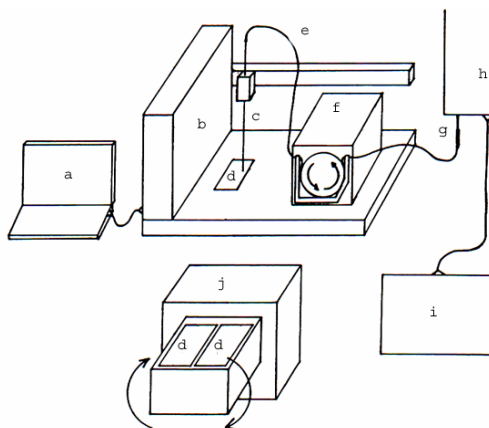
## 2. GPCR on beads: LA Sklar, TBuranda.

Highlights: Soluble 7TMR; agonist-antagonist discrimination; modeling protein-protein interactions.



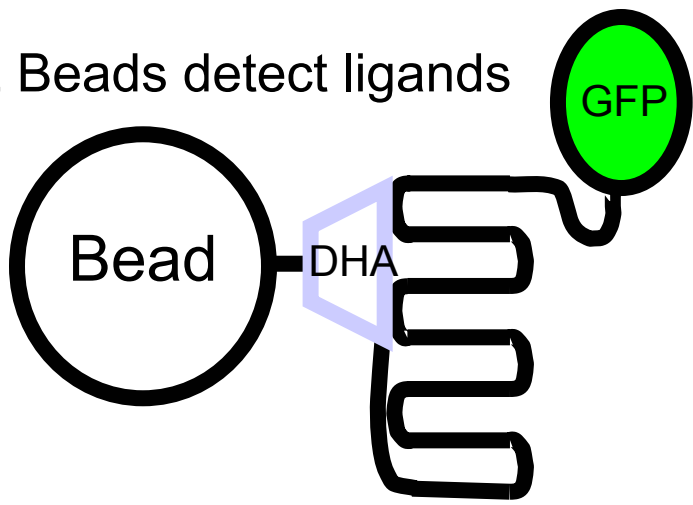
**3. HT Flow Cytometry.** BS Edwards. Highlights: HTFCM and Multiplexing; analysis of carryover; library screening.

**& Microfluidics** GPLopez, AA Mammoli, HTran  
Highlights: Microchannel sensor, Mesoporous beads, Mixing @ low Reynolds #

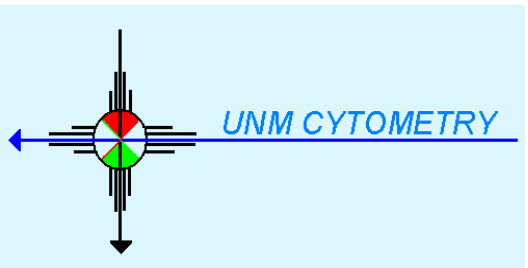
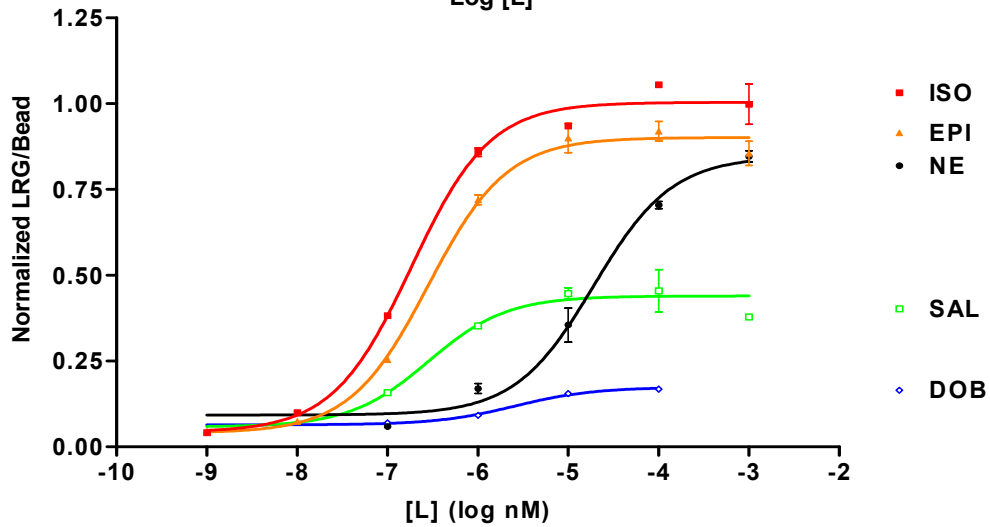
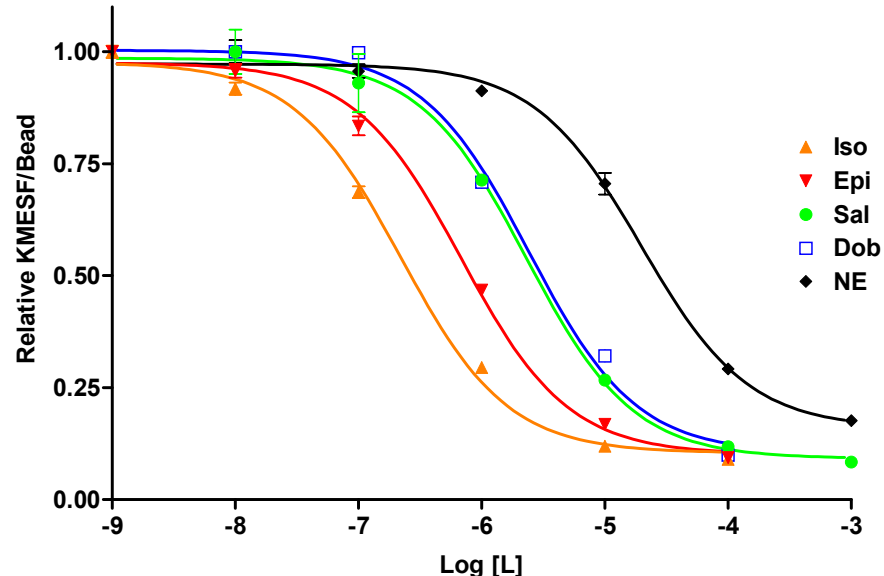
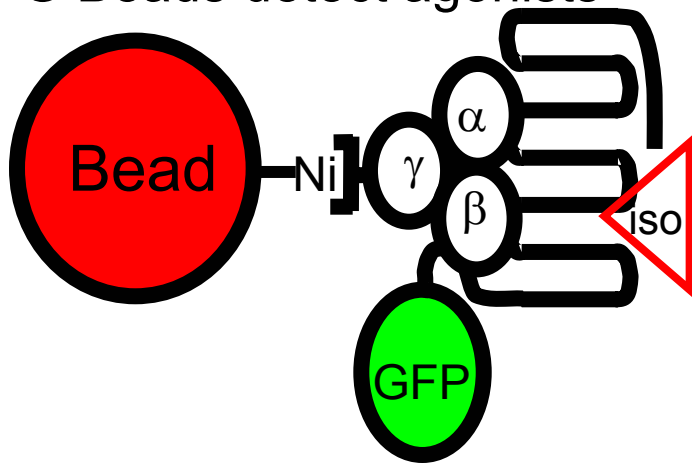


# Simultaneous Discrimination: Antagonist, Full/Partial Agonist

L Beads detect ligands



G Beads detect agonists



Ligand beads (LR): native  $K_d$ , rank order  
G beads distinguishes full/partial agonists

# Status/Plans

- Presentation: ~ 50 publications, ~ 50 abstracts, ~20 invited presentations, 1 book
- Intellectual Property: >10 inventions/patent applications
- Commercial Interactions: 2 licenses, 1 research contract, 3 MTAs/collaborations, current commercialization partner
- Spinoffs: sensors (NSF Lopez), microfluidics and materials (Mammoli, SNL LDRD/CINT), K25 (Buranda)
- HTS (5000 compound library 68 hits 1-50  $\mu$ M, 10 novel chemical families); R03 pending (Edwards), COBRE application
- Protein-Protein Interactions/Collaborations:
  - External: NIH Glue Grant Cell Migration Consortium; MepNET; NFCR RR01315 Collaboration (Edwards)
  - Internal: UNM: ICBP, Keck
- NIH Roadmap: Assays, Tools, Screening, Libraries, Databases, Chemistry
- BRP Renewal: 186 not funded in 2004
- Challenges and rewards of multidisciplinary teams
  - Integration/Team Building/Centralized Budgeting
    - Molecular and Cell Biology, Biochemistry, Biophysics,
    - Instrumentation, Programming,
    - Cheminformatics Virtual Screening, Chemistry
    - Sensors, Fluidics, Miniaturization, Materials, Modeling
  - Students
  - Faculty Recognition/Cultures

